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10/772,360	02/06/2004	Hitoshi Furukawa	00862.023449.	5049

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FITZPATRICK CELLA HARPER & SCINTO
1290 Avenue of the Americas
NEW YORK, NY 10104-3800

EXAMINER	
MILIA, MARK R	
ART UNIT	PAPER NUMBER
2625	
MAIL DATE	DELIVERY MODE
08/31/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/772,360	FURUKAWA, HITOSHI	
	Examiner	Art Unit	
	Mark R. Milia	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,7,8,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,7,8,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 6/16/10 and has been entered and made of record. Currently, claims 1, 3-4, 7-8, are 10-11 are pending.

Response to Arguments

2. Applicant's arguments filed 6/16/10 have been fully considered but they are not persuasive.

The applicant asserts that the applied art of Hanyu, Muto, and Ootani is not seen to disclose or suggest at least the feature of synchronizing data communication from a second controller to a first controller in a rewrite mode when rewrite data is transmitted from the second controller to the first controller, by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data, as recited in claims 1 and 11. The Examiner respectfully disagrees as the combination of Hanyu, Muto, and Ootani does disclose such a feature. Particularly, Ootani discloses a signal line RYIBY that in a ready state is at a H level while executing instructions or commands, such as an instruction for rewrite mode shown by signal line

IWE shifting to L and the signal line RYIBY shifts to a busy state or L level when executing rewrite processes and shifts to a ready or H level when available for data transmission/reception (Fig. 5 and paragraphs 44-47, 53, and 56-60). As seen in figure 5 the "H" and "L' levels are maintained over a particular time interval and thereby synchronization by repeated notification is implied since the levels are maintained until a need for ready/busy state shifts are required for rewriting purposes. Therefore, Ootani discloses synchronizing data communication from a second controller to a first controller in a rewrite mode when rewrite data is transmitted from the second controller to the first controller, by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data, as recited in claims 1 and 11.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3-4, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanyu (US 7,131,124) in view of Muto (US 2002/0018665) and Ootani (US 2003/0093612).

Regarding claim 1, Hanyu discloses a data transfer method between a first controller which controls an engine section for forming an image and a second controller

which transmits image data to the first controller, wherein the engine section includes a nonvolatile memory, wherein in an image forming operation mode of forming an image with the engine section, the method comprises: notifying the second controller of a condition change of the engine section by the first controller, (see Fig. 3 and column 8 line 59-column 9 line 60, input section **502** determines when an instruction to download a control program from a host computer is input via a control panel **303** and if so, the engine controller **301** terminates all operations of the printer engine and clears the flash EEPROM **301**b as to ready the flash EEPROM for download on the new control program. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301**b), and transmitting a condition request instruction by the second controller to the first controller via a data signal line, in response to the notification of the condition change (see column 9 lines 4-10, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**), and wherein in a rewrite mode of rewriting the nonvolatile memory, the method comprises: transmitting a rewrite instruction by the second controller to the first controller (see Fig. 3, column 4 lines 47-49, column 7 lines 30-34 and 48-54, column 8 lines 59-67, and column 9 lines 3-50, synchronization is established after an instruction to download a control program is detected, then the engine controller requests transmission of a

downloaded program from the printer controller, which in turn receives the downloaded program from the host computer, thereby instruction to retrieve the downloaded control program is initiated and in response the control program is transferred to the engine controller and the flash memory is rewritten with the new program), transmitting rewrite data by the second controller to the first controller via the data signal line, in response to the rewrite instruction, and rewriting the nonvolatile memory of the engine section by the first controller, by the rewrite data transmitted from the second controller (see Fig. 3, column 8 lines 1-8, and column 9 lines 51-65).

Hanyu does not disclose expressly notifying a condition change by changing a signal level of a report signal line from a first level to a second level, transmitting a condition request instruction by the second controller to the first controller via a data signal line in response to the notifying of the condition change, while the signal level of the report signal line is at the second level, transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level of the report signal line is returned to the first level, and in a rewrite mode transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level of the report signal line is at the first level, transmitting data by the second controller to the first controller via the data signal line in response to the rewrite instruction, while the signal level of the report signal line is at the first level, notifying the second controller that the first controller is not ready for reception of the rewrite instruction or the rewrite data by changing the signal level of the report signal line from the first level to the second level, and rewriting the

nonvolatile memory of the engine section by the first controller by the rewrite data transmitted from the second controller, wherein, in the rewrite mode, when the rewrite data is transmitted from the second controller to the first controller, data communication from the second controller to the first controller is synchronized by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data.

Muto discloses notifying a condition change by changing a signal level of a report signal line from a first level to a second level (see paragraphs 58 and 69, signal line /CCRT is used to inform status change in the printer to print controller **213** and shifts from a high level to a low level when a change is detected in the printer), transmitting a condition request instruction by the second controller to the first controller via a data signal line in response to the notifying of the condition change, while the signal level of the report signal line is at the second level (see paragraph 69, signal /CCRT stays at a low level while the printer controller **213** issues a command requesting the status), transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level of the report signal line is returned to the first level (see paragraphs 68, 71, and 73, after the change has cleared /CCRT returns to a high level and then the print controller **213**).

Ootani discloses in a rewrite mode transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level of the report

signal line is at the first level (see Fig. 5 and paragraphs 44-47, 53, and 56-60, signal line RYIBY is in a ready or H level while executing instructions or commands, such as an instruction for rewrite mode shown by signal line IWE shifting to L), transmitting rewrite data by the second controller to the first controller via the data signal line in response to the rewrite instruction, while the signal level of the report signal line is at the first level (see Fig. 5 and paragraphs 44-47, 53, and 56-60, signal line RYIBY is in a ready or H level while transmitting/receiving instructions or commands, such as rewrite data), notifying the second controller that the first controller is not ready for reception of the rewrite instruction or the rewrite data by changing the signal level of the report signal line from the first level to the second level (see Fig. 5 and paragraphs 56-60, signal line RYIBY shifts to a busy or L level when executing rewriting), and rewriting the nonvolatile memory of the engine section by the first controller by the rewrite data transmitted from the second controller, wherein, in the rewrite mode, when the rewrite data is transmitted from the second controller to the first controller, data communication from the second controller to the first controller is synchronized by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data (see Fig. 5 and paragraphs 44-47, 53, and 56-60, a signal line RYIBY that in a ready state is at a H level while executing instructions or commands, such as an instruction for rewrite mode shown by signal line IWE shifting to L and the signal line RYIBY shifts to a busy state or L level when executing rewrite processes and shifts to a

ready or H level when available for data transmission/reception. As seen in figure 5 the "H" and "L' levels are maintained over a particular time interval and thereby synchronization by repeated notification is implied since the levels are maintained until a need for ready/busy state shifts are required for rewriting purposes).

Regarding claim 11, Hanyu discloses an image forming apparatus including a first controller which controls an engine section for forming an image and a second controller which transmits image data to the first controller, wherein the engine section includes a nonvolatile memory, and wherein the image forming apparatus is configured to operate in an image forming operation mode of forming an image with the engine section, or a rewrite mode of rewriting the nonvolatile memory, the apparatus comprising: means for, in the image forming operation mode, notifying the second controller of a condition change of the engine section by the first controller, (see Fig. 3 and column 8 line 59-column 9 line 60, input section **502** determines when an instruction to download a control program from a host computer is input via a control panel **303** and if so, the engine controller **301** terminates all operations of the printer engine and clears the flash EEPROM **301**b as to ready the flash EEPROM for download on the new control program. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301**b), means for, in the image forming operation mode, transmitting a

condition request instruction by the second controller to the first controller, in response to the notification of the condition change (see column 9 lines 4-10, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**), means for, in the rewrite mode, transmitting a rewrite instruction by the second controller to the first controller (see Fig. 3, column 4 lines 47-49, column 7 lines 30-34 and 48-54, column 8 lines 59-67, and column 9 lines 3-50, synchronization is established after an instruction to download a control program is detected, then the engine controller requests transmission of a downloaded program from the printer controller, which in turn receives the downloaded program from the host computer, thereby instruction to retrieve the downloaded control program is initiated and in response the control program is transferred to the engine controller and the flash memory is rewritten with the new program), means for, in the rewrite mode, transmitting rewrite data by the second controller to the first controller, in response to the rewrite instruction, and means for, in the rewrite mode, rewriting the nonvolatile memory of the engine section by the first controller, by the rewrite data transmitted from the second controller (see Fig. 3, column 8 lines 1-8, and column 9 lines 51-65).

Hanyu does not disclose expressly signal lines for communication between the first controller and the second controller, wherein the signal lines include a report signal line and a data signal line, wherein a signal level of the report signal line is changed by the first controller, and wherein the data signal line is for transmitting data from the second controller to the first controller, notifying a condition change by changing a signal level of a report signal line from a first level to a second level, means for, in the

image forming operation mode, transmitting a condition request instruction by the second controller to the first controller via a data signal line, while the signal level of the report signal line is at the second level, means for, in the image forming operation mode, transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level of the report signal line is returned to the first level, and means for, in the rewrite mode, transmitting a rewrite instruction by the second controller to the first controller via the data signal line while the signal level of the report signal line is at the first level, means for, in the rewrite mode, transmitting rewrite data by the second controller to the first controller via the data signal line in response to the rewrite instruction, while the signal level of the report signal line is at the first level, means for, in rewrite mode, notifying the second controller that the first controller is not ready for reception of the rewrite instruction or the rewrite data by changing the signal level of the report signal line from the first level to the second level, and rewriting the nonvolatile memory of the engine section by the first controller by the rewrite data transmitted from the second controller, wherein, in the rewrite mode, when the rewrite data is transmitted from the second controller to the first controller, data communication from the second controller to the first controller is synchronized by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data.

Muto discloses notifying a condition change by changing a signal level of a report signal line from a first level to a second level (see paragraphs 58 and 69, signal line /CCRT is used to inform status change in the printer to print controller **213** and shifts from a high level to a low level when a change is detected in the printer), transmitting a condition request instruction by the second controller to the first controller via a data signal line, while the signal level of the report signal line is at the second level (see paragraph 69, signal /CCRT stays at a low level while the printer controller **213** issues a command requesting the status), transmitting condition information by the first controller to the second controller via the data signal line in response to the condition request instruction, after the signal level of the report signal line is returned to the first level (see paragraphs 68, 71, and 73, after the change has cleared /CCRT returns to a high level and then the print controller **213**).

Ootani discloses in a rewrite mode transmitting an instruction by the second controller to the first controller via the data signal line, while the signal level of the report signal line is at the first level (see Fig. 5 and paragraphs 44-47, 53, and 56-60, signal line RYIBY is in a ready or H level while executing instructions or commands, such as an instruction for rewrite mode shown by signal line IWE shifting to L), transmitting rewrite data by the second controller to the first controller via the data signal line in response to the rewrite instruction, while the signal level of the report signal line is at the first level (see Fig. 5 and paragraphs 44-47, 53, and 56-60, signal line RYIBY is in a ready or H level while transmitting/receiving instructions or commands, such as rewrite data), notifying the second controller that the first controller is not ready for reception of

the rewrite instruction or the rewrite data by changing the signal level of the report signal line from the first level to the second level (see Fig. 5 and paragraphs 56-60, signal line RYIBY shifts to a busy or L level when executing rewriting), and rewriting the nonvolatile memory of the engine section by the first controller by the rewrite data transmitted from the second controller, wherein, in the rewrite mode, when the rewrite data is transmitted from the second controller to the first controller, data communication from the second controller to the first controller is synchronized by repeatedly notifying the second controller of a first condition which indicates that the first controller cannot receive data following the current data since the first controller is rewriting data, and a second condition which indicates that the first controller can receive the data following the current data (see Fig. 5 and paragraphs 44-47, 53, and 56-60, a signal line RYIBY that in a ready state is at a H level while executing instructions or commands, such as an instruction for rewrite mode shown by signal line IWE shifting to L and the signal line RYIBY shifts to a busy state or L level when executing rewrite processes and shifts to a ready or H level when available for data transmission/reception. As seen in figure 5 the "H" and "L' levels are maintained over a particular time interval and thereby synchronization by repeated notification is implied since the levels are maintained until a need for ready/busy state shifts are required for rewriting purposes).

Hanyu, Muto & Ootani are combinable because they are from the same field of endeavor, writing of data via signal lines.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the ready and busy levels of a signal line for rewrite

processing, as described by Ootani, and the use of signal and reporting lines that indicate condition change and status information, as described by Muto, and which is well known and commonly used in the art, with the system of Hanyu.

The suggestion/motivation for doing so would have been to decrease the possibility of errors during rewriting of data by notifying status and condition changes and busy and ready states to ensure proper writing of data is executed.

Therefore, it would have been obvious to combine Muto and Ootani with Hanyu to obtain the invention as specified in claims 1 and 11.

Regarding claim 3, Hanyu further discloses in the image forming operation mode, transmitting a condition of the engine section by the first controller to the second controller (see column 9 lines 4-10 and 32-37, in response to a download instruction the engine controller **301** terminates the operation of each component of the printer engine **302**. After the engine controller **301** completes the above tasks, it sends a demand for transmission, which is also seen as a notification that the engine controller is ready for control program download, to the printer controller **300**, which in turn acquires the control program from the host and then transfers the control program frame by frame to the engine controller **301** for writing of the program into memory, flash EEPROM **301**b). Muto further discloses in the rewrite mode, transmitting a condition of the first controller by the first controller to the second controller via the data signal line, after the signal level is changed from the first level to the second level (see paragraphs 68, 71 and 73, when the printer controller **213** issues a command to the engine controller **202**, the

/CBSY signal is shifted to a low level state, at which time the status of the engine is transmitted, and then the /CBSY signal returns to the high level and the printer controller **213** continues to request printing).

Regarding claim 4, Hanyu further discloses wherein a condition of the first controller is one of a data transfer error, an erase or rewrite operation result of the nonvolatile memory, or an end of the rewrite operation of the nonvolatile memory (see column 5 lines 14-20 and column 9 line 66-column 10 line 5).

Regarding claim 7, Ootani further discloses a step in the rewrite mode of determining that an error occurs in a rewrite operation based on a time period before the signal level is changed to the first level from the second level (see paragraphs 56-57).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the error determination based on a time period, as described by Ootani, and which is well known and commonly used in the art, with the system of Hanyu and Muto.

The suggestion/motivation for doing so would have been to decrease the possibility of errors during rewriting of data by detecting errors based on the elapse of a certain time period to ensure proper writing of data is executed.

Regarding claim 8, Hanyu further discloses wherein the rewrite data is a control program code data (see column 3 lines 50-54, column 3 line 66-column 4 line 3, and column 4 lines 47-49).

Regarding claim 10, Hanyu further discloses wherein the nonvolatile memory is a flash memory (see Fig. 3 **301b**).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Milia whose telephone number is (571)272-7408. The examiner can normally be reached M-F 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached at (571) 272-7437. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark R. Milia
Examiner
Art Unit 2625

/Mark R. Milia/
Examiner, Art Unit 2625

/Twyler L. Haskins/
Supervisory Patent Examiner, Art Unit 2625